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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,253	10/18/2001	Takefumi Nagata	Q66677	5979

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EXAMINER

CHOOBIN, BARRY

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/981,253	NAGATA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Barry Choobin	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 4/5/2005 have been fully considered but they are not persuasive.

Applicant argues that the prior art of record does not disclose or suggest compressing a high-density range of chest tomographic image.

The Examiner disagrees. Nakazawa et al disclose compressing total dynamic range, which encompasses for both high or low-density range as required by claim language.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakazawa et al (US 5,319,719).

As to claim 1, Nakazawa et al disclose a tomographic image processing method for carrying out image processing on image (fig.11) data representing a chest tomographic image (column 15, lines 12-18 wherein digital image signal is X-ray CT or the like. And fig.17 with chest portion image) the method comprising the step of:

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carrying out dynamic range compression processing on the image data (column 12, lines 21-32 wherein a total dynamic range can be compressed) so as to compress a high density range of the chest tomographic image (column 12, lines 21-32 wherein a total dynamic range can be compressed will read also on high density).

As to claim 3, all the limitations of claim 3 are analogous to limitations of claim 1, which are addressed in claim 1 above, and as to apparatus claim, Nakazawa et al disclose an apparatus in (fig.1).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazawa et al in view of Tsuchino et al (US 5,493,622).

As to claim 2, Nakazawa et al disclose the method of claim 1 (see claim 1 above).

Nakazawa et al disclose a frequency emphasized but does not expressly disclose that the step of: carrying out frequency enhancing processing on the image data having been subjected to the dynamic range compression processing.

Tsuchino et al disclose a method for producing a radiographic image of a subject comprising: carrying out frequency enhancing processing on the image data having been subjected to the dynamic range compression processing (column 17, lines 12-20).

Nakazawa et al and Tsuchino et al are combinable because they are from similar problem solving area of improving contrast in lung portion for suitable diagnosis.

At the time the invention, it would have been obvious to a person of ordinary skill in the art to modify Nakazawa et al by carrying out frequency enhancing processing on the image data having been subjected to the dynamic range compression processing as thought by Tsuchino et al to correct a resolving power of the contrast which has been deteriorated by compression of the dynamic range (column 17, lines 12-16 of Tsuchino et al).

The suggestion/motivation for doing so would have been to correct a resolving power of the contrast which has been deteriorated by compression of the dynamic range, and to correct a visual impression that the contrast seem to have been lowered (column 17, lines 12-20).

Therefore, it would have been obvious to combine Nakazawa et al with Tsuchino et al to obtain the invention as specified in claim 2.

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As to claim 4, all the limitations of claim 4 are analogous to limitations of claim 2, which are addressed in claim 2 above, and as to apparatus claim, Nakazawa et al disclose apparatus in fig 1.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazawa et al in view of Wang et al (US 6,424,730).

As to claim 5, all the limitations of claim 5 are addressed by Nakazawa et al in claim 1 (above). However Nakazawa et al does not expressly disclose a computer readable recording medium storing a program to cause a computer to execute the method of the claim.

Wang et al disclose a medical image enhancement method comprising; computer readable recording medium storing a program to cause a computer to execute the application program (fig.5).

Wang et al and Nakazawa et al are combinable because they are from the same field of endeavor of enhancing medical images.

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At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Nakazawa et al with computer readable recording medium storing a program to cause a computer to execute the application program as thought by Wang et al in order to improve the computation efficiency (column 5, lines 12-21).

The suggestion/motivation for doing so would have been to improve the computation efficiency of digital image processing (column 5, lines 12-21).

Therefore, it would have been obvious to combine Nakazawa et al and Wang et al to obtain the invention as specified in claim 5.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazawa et al in view of Wang et al as applied to claim 5 above, and further in view of Tsuchino et al (US 5,493,622).

As to claim 6, the computer readable recording medium of claim 5 is thought by Nakazawa et al and Wang et al (above).

Nakazawa et al and Wang et al do not expressly disclose that the step of: carrying out frequency enhancing processing on the image data having been subjected to the dynamic range compression processing.

Tsuchino et al disclose a method for producing a radiographic image of a subject comprising: carrying out frequency enhancing processing on the image data having been subjected to the dynamic range compression processing (column 17, lines 12-20).

Nakazawa et al, Wang et al and Tsuchino et al are combinable because they are from similar problem solving area of enhancing medical images for suitable diagnosis.

At the time the invention, it would have been obvious to a person of ordinary skill in the art to modify Nakazawa et al and Wang et al by carrying out frequency enhancing processing on the image data having been subjected to the dynamic range compression processing as thought by Tsuchino et al to correct a resolving power of the contrast which has been deteriorated by compression of the dynamic range (column 17, lines 12-16 of Tsuchino et al).

The suggestion/motivation for doing so would have been to correct a resolving power of the contrast which has been deteriorated by compression of the dynamic range, and to correct a visual impression that the contrast seem to have been lowered (column 17, lines 12-20).

Therefore, it would have been obvious to combine Nakazawa et al and Wang et al with Tsuchino et al to obtain the invention as specified in claim 6.



As to claims 7-9, Tsuchino et al disclose multiple frequency enhancing processing (see claim 5, having different frequency characteristic corresponds to multiple frequency).

### ***Conclusion***

**10. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***CONTACT INFORMATION***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry Choobin whose telephone number is 571-272-7447. The examiner can normally be reached on M-F 7:30 AM to 18:30 .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**DANIEL MIRIAM**  
**PRIMARY EXAMINER**

Barry Choobin  
8/17/05